

INTERFACE



CYBERNETICS IN CLEMENT SECTOR



INTERFACE: CYBERNETICS IN CLEMENT SECTOR

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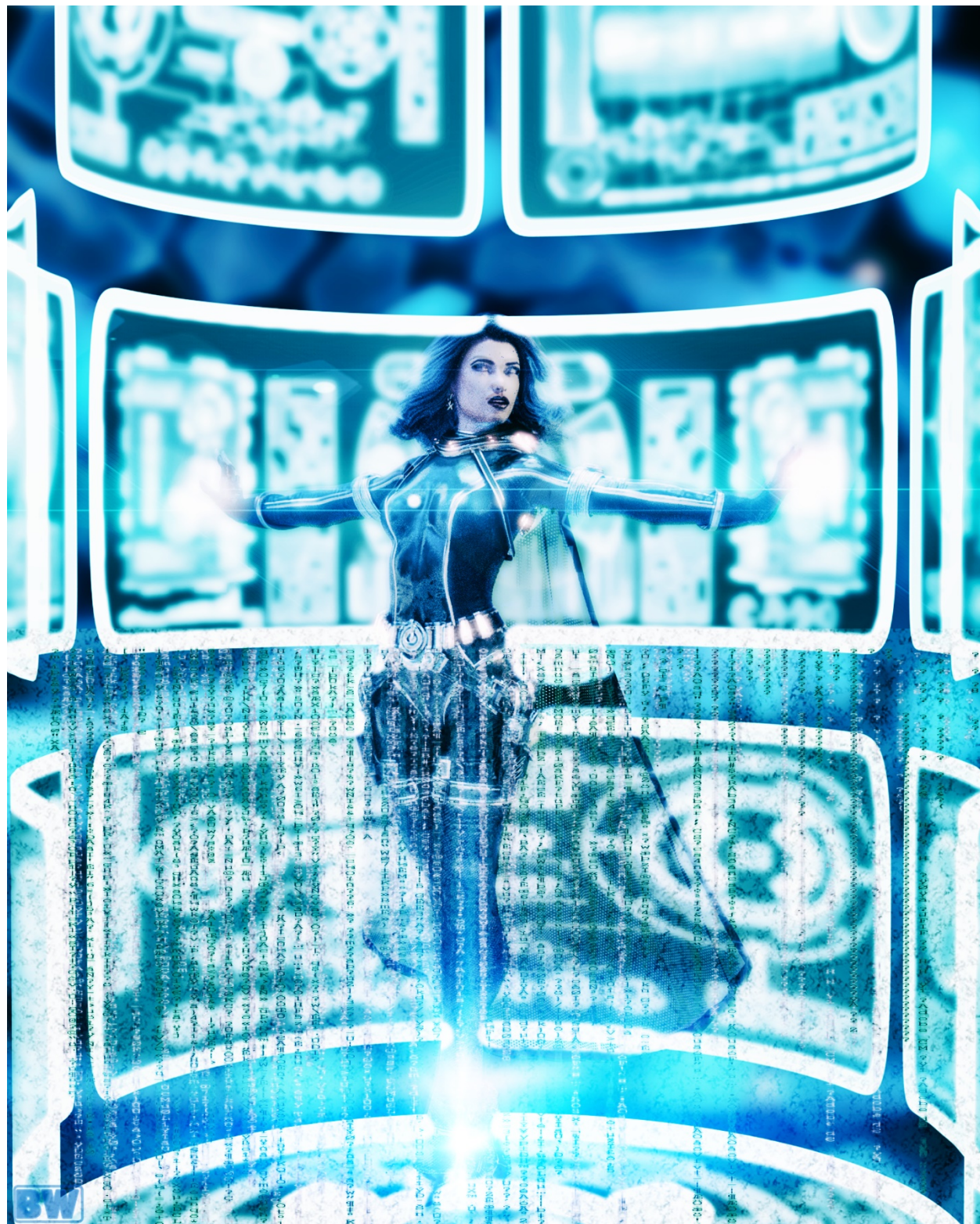


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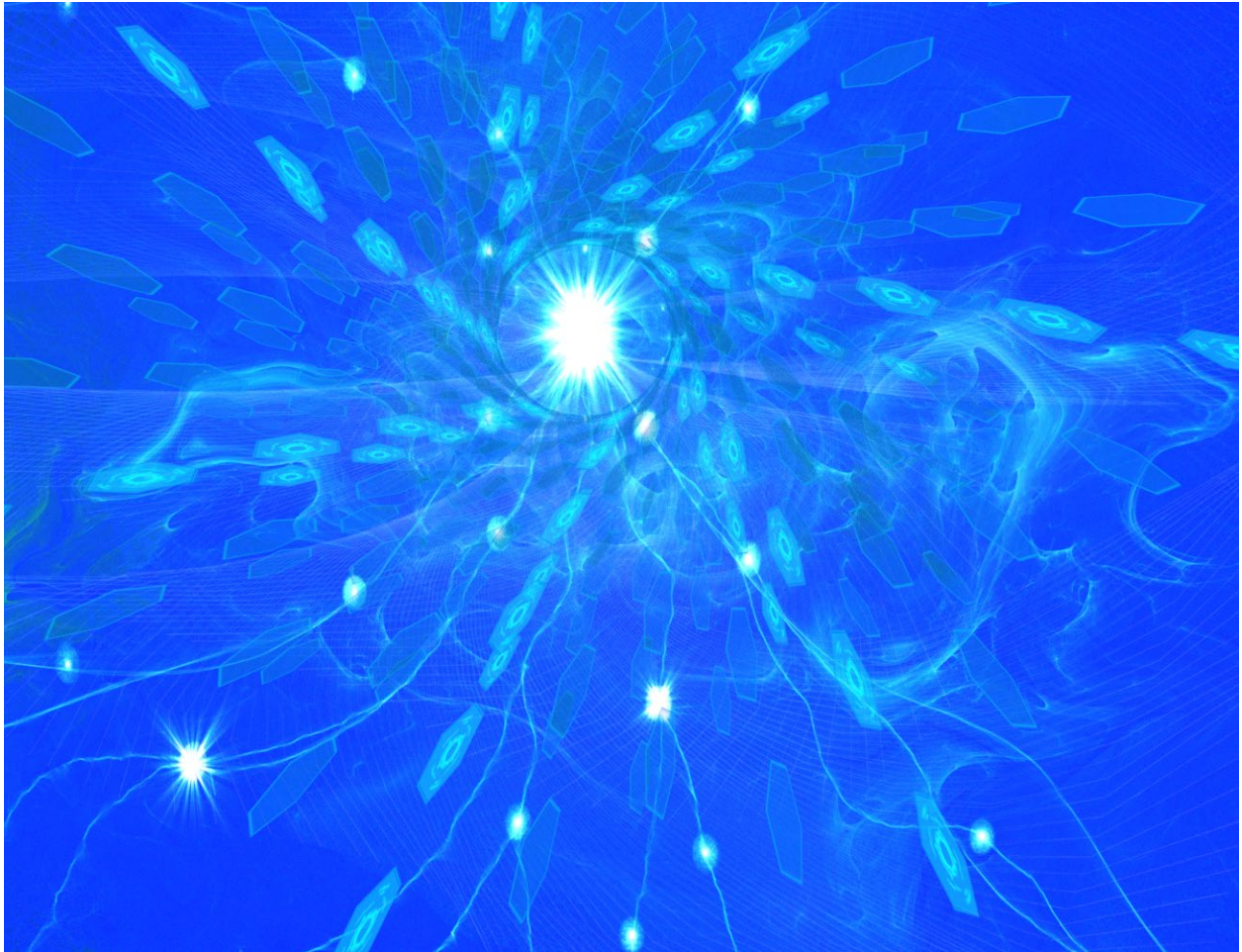
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CYBERNETICS IN CLEMENT SECTOR

"... it is commonly known to mean the hardware or machine parts implanted in the human body and acting as an interface between the central nervous system and the computers or machinery connected to it."
Wikipedia Commons pre-worldnet 2018 standard

"What do you expect me to do? Replace it with a metal and plastic construct like those religious fanatics from Kingston? No thanks, I will stick with a regrown arm and damn the cost."
Georgina Cullen, Boone System 2297 standard

Humanity has used prosthetics of some form for thousands of years. Initially crude hooks and pegs for hands and legs lost in battle or accident, false teeth and other cosmetic prosthetics, they were very limited in function and use until more sophisticated technologies utilized lighter materials and allowed for articulation. At the end of the 21st century further technological improvements led to the widespread use of affordable first-generation cybernetic arms and limbs, energized by kinetic energy and connected to the body's neural network to provide full movement. Artificial eyes and replacement hearing also became available at this time and experiments into cybernetic organ replacement began.

During the South Pacific War (2081 – 2086), the Japanese army was the first to deploy soldiers with enhanced cybernetic eyesight. This allowed the JDSF troops the ability to fight without the need for bulky light enhancement devices – a distinct advantage during night time operations. Thailand copied the practice and soon cyber-enhanced soldiers appeared in armies across the world.

In the main, first generation cyberware simply replaced the original function of that what was lost, but as the end of the 22nd century drew to a close second and third generation cybernetics allowed for options to be installed into the cyberware device without exorbitant cost.

But the short-lived dominance of cyberware as the only choice for limb and organ replacement ended as bio-printing was joined by regeneration therapy. Both were expensive, more than simply using cyberware, but regardless of the high price it was soon the accepted norm for a

world still reeling from the horrors of the Bangkok incident. Like roboticists, cybernetics manufacturers made every attempt to improve the public opinion about artificial body part replacements. Further developments in fauxskin technology were introduced so that it was very difficult to see that a limb or an eye were indeed artificial. Such refinements added to cost and so some recipients could still only afford the cheapest cybernetic limbs or eyes without the faux natural look. For some that opted for "non-blended" cybernetic limbs and eyes, it was an expression of self to be very obviously a fusion of tech and biological. For some of those it even extended to replacing a perfectly good body part for something artificial. Others, especially colonists, had no choice in the matter. They were provided with what was available.

The Bangkok Agreement of 2086 expressly forbid the creation of cyborgs and limiting cyberware to limb replacement, eye replacement, and hearing replacement. Limits were also placed on the capability of cybernetic replacements as well, reducing the fear that bio-robots would wreak havoc against un-enhanced humans. Cyberware was still considered important with the belief that it must continue to be made available as a cheaper option for those who could not afford the cost, still comparatively high, of bio-printing and regeneration. Bio-printing of internal organs was made cheaper by world governments subsidizing the process so to make the option affordable for all.

"My brothers and sisters, harken ye to the words of the blessed Tralixi. For the blessed Tralixi wants us all, the true inheritors of the majesty of man, to

be one with the greatest gifts that technology can provide. Do not get sad when it is required that your arms need to be improved, do not despair that a leg must be replaced to improve your importance to the whole. Find purity in your soul so that gifts of technology meld to oneself. Praise Tralixi and God for the sanctity of your belief." -
Father Louis De Spraque, Beaconsfield, Kingston
September 3, 2285 standard

Founded in 2172, the new religion of Caxtonism preached the benefits of cyberware above all genetic engineering (including regeneration) with the only permissible exception being long life treatments. Caxton preached that Tralixi, the angel of light was the one who made him see the truth and appointed him his emissary upon humanity. Tralixi gave the gift of cyberware to all mankind, pointing the way to the true path to enlightenment and internal life. Now, one hundred and seventy years later, the Caxtonist theocracy of Kingston is both feared and reviled. All its citizens are interfaced with mindcomps so as to ensure that they continue to express their devotion to Tralixi (and the theocracy).

Throughout the vast volume of space colonized by humans, on both sides of the Conduit, cyberware is still not entirely universally accepted. A small number of systems revile

cyberware, while an equally small number fully embrace the use of cyberware. Two extremes with a range of acceptance in between.

Cyberware however is an integral part of Clement Sector whether it is a bare metal replacement arm with ornate engraved Celtic patterns, or a biosynth replacement so close to real you cannot tell it was artificial even if you shook the proffered arms hand. Only the laws and cultural attitudes of individual systems will determine just what extent that integration will be.

Author's Note

Interface: Cyberware in Clement Sector is a companion volume to *Artificial: Robots in Cement Sector*. You do not need to own *Artificial* to use *Interface* but it is recommended. For those who have that book, you will note that the terminology and options presented are similar to what can be installed in robots.

Please note though, that cybernetic components will always cost more than a robotic equivalent. This is because of the more sophisticated manufacturing, materials, lower power requirements and complex circuitry.

1. Cyberware and Interfacing

Power Sources

Cybernetic implants will either use high duration batteries or be powered directly from the body. Cyberneticists consider energy efficiency to be very important for any implant or augment and will go to great lengths to ensure new designs and improvements use the most efficient means to use, store and recharge power with different cybernetic components maintaining power via appropriate means. For example, an arm or leg gain energy from the body's internal electrical field boosted by kinetic energy conversion (limb movement), while a cybernetic eye would use light conversion to charge its internal battery.

High duration batteries can be added to further increase power if the cyberware type requires such due to options installed as part of customization. Smaller components that are not so power reliant might rely solely on the body's internal electrical field to provide power.

Power sources do degrade over time or due to damage so cyberware manufacturers have rigid standards in regard to maintenance and servicing for their products. Failure to adhere to those standards will most certainly result in failures which could occur when least expected or at precisely the wrong time. See the section on Maintenance for further information.

Implant Networks

Cybernetic limbs are connected to the body's nervous system via artificial nerve fibers that allow that limb to have the full range and function of the limb it has replaced as well as providing full neural command pathways. Options added to the limb, such as an integrated weapon or tools can simply be activated by a neural command. By TL 10 biosynthetic fibers replace fully artificial linkages providing much more efficient interfacing with biological nerve endings.

Implants that can be connected directly to a mindcomp are done so using biosynthetic nerve fibers to provide a secure and durable link. Implants that provide recordable data will also have a separate artificial linkage to the mindcomp.

Trials undertaken earlier in development of implant technology have proved that any other form of communication such as wireless are vulnerable to outside influences including hacking.

Interfacing

Interfacing

noun

Surgically adding or implanting cybernetic components (cyberware)

Usage: "The medics at the clinic completed interfacing the patient's new cybernetic eye"

Apart from mindcomps, cyberware will most often replace a lost limb, replace an eye or restore lost hearing where the expense and lost time required for regeneration or bio-reprinting is prohibitive. For some individuals, replacing a functional body part or parts with cybernetic one is a form of self-expression.

As technology improves interfacing new cyberware becomes easier and more successful. By TL 11, such procedures are considered routine.

Interfacing cyberware requires both a cybernetic professional and a medic specializing in cybernetics. Clinics and medical facilities will have personnel with these professional skills available to undertake any procedure. A task roll is required from each skill.

Interfacing Cyberware Task 1: Medic (Cybernetics), EDU, 1-6 hours, Tech Level Task Difficulty

Interfacing Cyberware Task 2: Trade (Cybernetics), EDU, 1-6 hours, Tech Level Task Difficulty

The tech level in the table refers to tech level in the system where the cyberware is being installed or when existing cyberware is repaired, upgraded or replaced.

<i>Tech Level Task Difficulty</i>		
TL	Difficulty	Effect
9	Difficult	-2
10	Average	+0
11	Routine	+1
12	Routine	+2
13	Routine	+2

The above task resolution requirement is also used for upgrading, repairing, replacing or removing existing cyberware.

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The roll Effect will determine if the cyberware interfacing was successful with the Effect results explained in the table below.

<i>Effect Results</i>		
Effect	Difficulty	Outcome
-6 or lower	Exceptional Failure	The cyberware cannot be interfaced and there will be a one standard month wait until another attempt can be undertaken.
-1 to -5	Failure	The cyberware is rejected and the recipient must succeed rejection rolls otherwise the cyberware is lost. If an implant is being removed, then there is a surgical complication requiring a 1d6 day stay in the medical facility post operation.
0 to +5	Success	Interfacing was successful with a +1 DM for rejection rolls.
+6 or higher	Exceptional success	Interfacing was successful with a +2 DM for rejection rolls.

Elias's Story - A New Beginning

Elias Drake looked up at the indistinct figures of the medical team working frantically to stabilise his life. He could feel nothing; the pain was gone but something was really quite wrong, and he wondered why he was lying on the hard plascrete floor of the processing shed on such a nice day.

Three weeks later...

"So Elias, as you know we have stabilised the stump of your right arm and you have elected to have a cybernetic arm rather than go through regeneration therapy. Insurance checks out and you can have a fauxskin replacement interfaced by the end of the month", the doctor smiled at him. "Do you have any questions to ask?"

Elias smiled back at the doctor. "I was wondering..."

Rejection

As medical science advances, the chance of the recipient's body rejecting a foreign object becomes manageable almost to the point it virtually ceases to be a matter of concern. Like the practice of transplantation anti-rejection medication routinely used on Earth before the development and widespread use of bio-printing and regeneration therapy, interfaced cyberware will require careful monitoring and a regime of anti-rejection drugs for up to three months after interfacing is undertaken. The first month is critical in determining the reaction of the recipient's body and the anti-rejection medication is taken for the remaining period as additional precaution. At higher tech levels the anti-rejection period reduces.

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If the full medication regime is not followed for the full anti-rejection period, then the character must re-roll to avoid rejection with an additional -1 DM per month the medication is not taken. At TL 12, there is no further requirement beyond the first month for medication. Anti-rejection medication costs 1500Cr per month.

Tech Level Modifier

TL	DM	Rejection Period
9	-2	Three months
10	0	Three months
11	+1	Two months
12	+2	One month
13	+3	One month

The rejection task roll is measured on the recipient's Endurance.

Cyberware Rejection Task: END, 1-6 weeks, Tech Level Task Difficulty (see p.9)

Rejection Roll

Effect	Result
5+	Acceptance. No further medication required.
2 to 4	Acceptance
0 to 1	Tolerance. Re-roll again next month. If TL 12, then the rejection period extends another month. If the next roll fails, the cyberware is automatically rejected and must be removed.
-1 or lower	Rejection. Cyberware must be removed and another interface attempt cannot be undertaken for a minimum of one month.

If by chance the interfacing of any cyberware is undertaken in Kingston (Hub 0106), then there can be an additional +3 DM applied. In all of Clement Sector, Kingston has the highest percentage of its population utilizing cyberware, approaching 100%. This overwhelmingly high percentage is due to the Caxtonist religion, regular theocratic government mandates and the requirements of the theocracy. Because of this, anti-rejection treatments and practices are extremely sophisticated. Indeed, if there is rejection, then the recipient is considered impure and unworthy of Tralixi's "gift" and is required to pay penance to purify their soul before another interfacing is undertaken.

Post Interfacing - Rejection

Elias has now undergone the surgical procedure, called interfacing, to attach his new cybernetic arm. Apart from learning how to use his arm effectively so it becomes a near perfect replacement for the one he lost, he must first face potential rejection of the new cyberware. Elias has an END of 9 (+1).

The interfacing was undertaken in a TL 11 hospital providing a +1 DM and a two-month rejection period. 1st Month's task roll is 11 +1 +1 = 13 resulting in a high acceptance result.

Because of the result the medical team elect to stop anti-rejection medication.

Maintenance

Like any other piece of complicated amalgamation of machinery and electronics, cyberware is required to have maintenance undertaken in regular intervals, typically annually. Maintenance costs will be 1% of the total cost of all the cybernetic devices and their options interfaced.

Cyberware maintenance is typically done at specialist clinics. Maintenance procedures will take 1d6 days to undertake, which includes examination of the cybernetic components and surgery to make adjustments if so required. For those with more than two cybernetic devices add +1 to the length of stay.

Exceeding the annual maintenance period will increase the chances of a cybernetic device or implant malfunctioning or failing completely. Which device fails is entirely up to the referee to decide. Starting one month past the annual maintenance date, each additional month incurs a -2 DM to a standard task roll to avoid device failure. If there are crew members or other members of the character group with Medic (Cybernetics) and Trade (Cybernetics), then there is +1 DM benefit.

If the avoidance roll fails, then there will be a consequence such as reducing the effective use of the cyberware and severe pain as the operating condition of the device worsens. Any Endurance characteristic damage due to pain caused by the failing device remains until the device is repaired. Refer to the Delay Consequences table below to apply the consequences for each month's delay of required annual maintenance.

Delay Consequences

Delay (Months)	Severity	Consequence
1	Intermittent Malfunction	-1 DM to any task or activity using that cyberware.
2	Malfunction	-2 DM to any task or activity using that cyberware.
3	Serious Malfunction	-2 DM to any task or activity using that cyberware, 1d6-2 temporary END reduction.
4	Partial Failure	A subcomponent or option fails with referee to determine which. -2 DM to any task or activity using that cyberware, 1d6-2 temporary END reduction.
5	Failure	Half the subcomponents or options fail with referee to determine which. -4 DM to any task or activity using that cyberware. Additional 2 points of temporary END reduction.
6+	Inoperable	-1 DM to any required Interfacing to install a replacement.

Cyberdiction, Cybernoia, and Cyberpsychosis

These three potentially debilitating psychological conditions can affect all users of cyberware.

These are distinct psychological ailments that can affect those who utilize cyberware and those who are terrified of cyberware. Medication and counselling can greatly assist those who are inflicted by either condition. However medical professionals specializing in cybernetics prefer to prevent any onset by counselling before each and every interfacing is undertaken, or during the three-month adjustment period post interface.

For these conditions, the first three months will be the critical time frame. A cyberware recipient must make a determination roll at the end of the three-month post interface recovery period. Further, if it is determined that a cyberware recipient does have a tendency, then they must make an avoidance task roll (page 16) every twelve months to avoid the diagnosed tendency from re-appearing.

If medication to control or treat these psychological conditions is required, it will be at a cost of 1250Cr per month.

Cyberdiction

An addiction to replacing limbs with cybernetic ones or adding implants has been in existence since the first viable and fully functional cybernetic body parts became widely available and accessible. No different from addictions to body modifications, skin scarring and tattoos, this malady can affect people from any social standing or walk of life.

Cyberdiction might arise after a person requires a replacement limb through an accident or other trauma, or by wanting a cybernetic replacement for a perfectly good arm simply for an expression of self. However, the real risk of full manifestation would only be after a second implant interface is undertaken.

Cybernoia

A popular expression, cybernoia is a rare unreasoning fear of any cyberware or those with cybernetic replacements. This can be a lifelong fear, either subconscious or overt or one developed through a traumatic personal experience. It can also even develop after a person has had a cybernetic implant or limb replacement. The latter is the most challenging and difficult to treat and requires extensive counselling and/or medication and is determined in this publication.

Cybernoia ranges from a mild fear, akin to being a little nervous around cybernetics, up to an unreasoning terror that can lead, though rarely, to a full mental breakdown. It can also have many external factors contributing to its onset, including culture and psychologists will work through these during treatment. It is not a cultural fear per se but cultural upbringing is recognized as contributing to the psychology of the condition.

Typically left untreated, mild cybernoia sufferers will have a -1 DM for any social interaction or task. If left untreated for five years this penalty increases to -2 DM and so on.

Cyberpsychosis

Psychologists believe this psychosis is one of the most difficult to treat, requiring extensive counselling and/or medication. Cyberpsychosis is a serious form of psychological reaction that can affect all cyberware recipients including those with multiple cybernetic implants. This can be a form of self-loathing, disconnection from the cyberware (limbs in particular) and disassociation from society.

Determination

Determining if a recipient has a psychological tendency is made by rolling 1d6 and consulting the Psychological Tendency table below. If the interfacing was performed in the system of Kingston or the recipient is a practicing Caxtonist then a +1 DM is applied.

If the roll results in no tendency, then the recipient is cleared by the clinic or hospital psychologists and no other action is required.

Psychological Tendency

Roll	Result Description
1	Psychological tendency
2 - 6	None

If the roll results in a psychological tendency, then a further roll is required to determine which condition the recipient suffers from. Consult the Psychological Tendency Type table below. Again, if the interfacing was performed in the system of Kingston or the recipient is a practicing Caxtonist then a +2 DM is applied.

Psychological Tendency Type

Roll	Result Description
1 - 2	Cyberpsychosis tendency
2 - 3	Cybernoia tendency
4 - 5	Cyberdiction tendency
6	Diagnosis flawed. No tendency

If the psychological tendency type result is a diagnosed cyberpsychosis then make a further roll against the table below to determine what type of sub condition it is.

Cyberpsychosis Sub Condition Type

Roll	Description
1	Disinterest in the affairs of “normals”. The sufferer believes that they are far better than those around them and all their activities are beneath their interest and feeling. Those others who are “improved” are seen as rivals even to the point of attacking them without warning. Further there is a risk that the sufferer will go on a murderous rampage, attacking everyone around them.
2	Catatonic withdrawal occurs. This can affect any recipient however it is usually more common for those who receive a cybernetic implant involuntarily and without prior notice. This can be inherently dangerous for the sufferer depending on severity of the catatonia and will require immediate medical intervention.
3	Post Interface Trauma Stress is akin to Post Traumatic Stress Disorder. This serious but treatable condition manifests itself in increased aggression, depression, addictive behaviors, potential personality changes and even attempts at self-harm (including suicide).
4	The sufferer develops Post Interface Latrophobia due to a traumatic interface procedure or maintenance procedure. A sufferer has an unreasoning fear of medical practitioners and facilities even to the point of being in continuous agony when an implant malfunctions. Convincing a sufferer to attend a medical facility requires a very difficult persuade task roll. If the task is an exceptional failure, then no amount of persuasion will convince the sufferer for an additional month. (Of course, stunning the sufferer and taking them to a medical facility can be considered).
5	Phantom pain occurs. This can affect any added cyberware and for most, the feeling tends to fade over time as the neural and nerve pathways settle down after interfacing. This condition in similar forms has been known to medical science for centuries and is comparatively easy to cure using counselling, physiotherapy treatments and medication.
6	Transplant disassociation occurs post interface and is a condition well known and very easily treated. A common form is that the sufferer considers the cyberware (usually a limb but not limited to it) does not belong to them. For example, a sufferer might affect a limp of the new leg simply because they believe it has one.

Tendency Avoidance

If a psychological tendency is determined, then a task roll for avoiding these becoming serious must be made. This is a routine difficulty task modified by the characters Endurance and additional appropriate DM's from the Pre-Condition Modifiers table below this paragraph.

Avoiding a Tendency: END, 1-6 months, DM from table below, Routine (+2)

Pre-Condition Modifiers

Modifier	Modifier Description
-2	Non voluntary interface (does not apply for a Caxtonist)
-2	Interfacing undertaken in an "off the radar" or illegal clinic
-1	Each additional cybernetic device added or already in place
+1	Interfacing undertaken in a TL 12 clinic or hospital
+1	Voluntary Interface
+1	For the first year of use of the new cyberware
+2	Ongoing medication and/or counselling regime
+4	Interfacing undertaken in Kingston or if the recipient is a Caxtonist

A successful roll means the character has avoided the tendency from becoming a serious condition immediately after interfacing. But they will still be required to make additional avoidance rolls every twelve months. This will require a six day stay at a medical facility and is often combined with annual maintenance. Mild medication can continue to be used to further improve outcome in subsequent rolls. If the roll fails, then full treatment is required (see below).

Treatment

Should a psychological tendency condition not able to be avoided (treated) during the three-month post interface recovery period, yearly avoidance treatment rolls fail or that a tendency is left untreated and manifests itself fully, then further treatment is required.

Even if the avoidance roll has been successful a recipient can elect to undertake full treatment to rid themselves of any complications in the future, with all the potential risks that might entail.

Treatments are undertaken by a qualified psychologist.

Providing Psychological Treatments: Science (Psychology), INT, 1-6 weeks, Difficult (-2)

A qualified medical practitioner will also be required to assist if the diagnosed condition requires medical treatment in addition to psychological treatment.

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Medical Assistance to Psychological Treatment: Medic (Cybernetics), INT, 1-6 days, Average (+0)

Effect Results

Effect	Difficulty	Outcome
-6 or lower	Exceptional Failure	A full, unreasoning condition has occurred requiring treatment in a psychiatric facility for a period of 12 standard months. Upon discharge, medication must be taken permanently, usually via a medi-implant. Failure to continue the medication regime results in an immediate relapse.
-5	Failure	The recipient exhibits the diagnosed condition and requires treatment roll. If left untreated the next check roll in 12 months incurs a -2 DM
0 to -4	Mild Failure/Marginal Success	The recipient shows a mild condition which requires an additional treatment roll with a +2 DM
+1 or higher	Success	No tendencies or further manifestation of any psychological condition observed.

Post Interfacing – Cyber Related Psychological or Physical Condition Determination

Elias now must commence a three-month period of intense counselling and physiotherapy. Elias has an END of 9 (+1).

To determine any potential for a Psychological tendency, Elias checks against the Psychological Tendency Table with a resultant roll of 1. Doctors have determined he has a tendency for a condition and checking against the Psychological Tendency Type table with a roll of 2 it is determined he has a Cyberpsychosis. But what type? A roll of 3 against Cyberpsychosis Sub Condition Type table reveals he has a real potential for Post Interface Trauma Stress.

It is hoped that the counselling during the post interface recovery period he is currently receiving will be enough to eliminate the tendency before it becomes a full condition.

He receives an additional +1 for volunteering for the interfacing and +2 for currently being in counselling.

Tendency Avoidance task roll = 5 +1 +3 = 9.

The successful task result means that he can be discharged from the medical facility but must have annual counselling sessions, re-rolling each time to see if the tendency does not become a potential problem. If the tendency does flare up, then he will need to undergo treatment so to deal with the condition permanently



2. Limbs

Arms

Artificial replacement of arms and hands has evolved from crude hooks, clamps and non-functional prosthetics into fully functional replacement limbs controlled by the recipient's nervous system and equipped with full tactile sensors. Non organic replacement arms and hands are still a common choice due to the high cost of regeneration therapy and the equally high cost and limited availability of a sophisticated biosynth replacement.

Most commonly, standard arms are contoured to match the recipient's original limb including any Strength and Dexterity characteristics, however any arm shape can be purchased providing that it can be fitted without drastic modifications to the attachment point area. Most cybernetic clinics will not undertake such procedures, but clinics that are "less reluctant" to undertake the surgical procedures of this kind can be found if one is prepared to look.

Unless specified, a standard replacement arm will always have a standard hand. Biosynth arm replacements cannot be fitted with any arm or hand options.

Framework

These are replacement arms devoid of even a hard skin or metal shell. Essentially skeletal (framework) they carry arm control and options circuitry within the frame of the arm. Any options added to the arm are visible for all to see. Only the hands (if equipped with such) of framework arms have tactile sensors. Framework arms are not weatherproof.

Standard

Designed to match the original limb's contours, the standard arm is available in a variety of different types and can be configured with various options and modifications. All standard arms are weatherproof.

Basic

The basic limb replacement, though contoured to look like an arm, is unadorned by fauxskin or any other covering. These are relatively cheap to buy and can be customized with a variety of arm and hand options, such as surface decorations, a multi tool socket, branching and integrated armament.

Fauxskin

Providing a soft and realistic looking covering for a replacement arm, fauxskin ensures the arm does not look like an obvious artificial construction. Fauxskin can be customized to replicate the skin tone and skin type of any creature.

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Early versions of fauxskin are first available at TL8 costing twice that listed on the table below. At TL10 fauxskin is indistinguishable at a distance from biological skin. At TL11 fauxskin is only distinguishable after a detailed visual inspection.

Biosynth

Available at TL 12, a biosynth arm has body warmth, a pulse can be felt and the skin can color or change in reaction to external stimulus. Biosynth skin and underlying dermal layers will also bleed when damaged and can “self-heal” any minor wounds, cuts and abrasions exactly like the original arm it is replacing. Treat the entire biosynth arm as having the same touch senses as a biological arm. They do not have Option Slots and the hand cannot be modified.

Tentacle Arms

Specialized arms that consist of short lengths connected by many fully articulated joints that provides great flexibility. This makes the tentacle superior in dexterity but lower in strength to other arms of similar size. Tentacle arms cannot have any components or weapons installed and require a small kinetically charged battery power pack to provide additional power.

These cost 2800Cr and provide +1 Strength and +2 Dexterity.

Arm Types

Arm Type	TL	Option Slots	Cost (HFCr)
Framework	7	4	1500
Standard Basic	8	3	2500
Standard Fauxskin	10	2	4500
Standard Biosynth	12	-	15,000
Tentacles	9	-	2800

Adding Armor

Standard cybernetic arms are armored to an equivalent of jack, providing 1 point of armor that can be added to an individual’s armor total. With the exception of biosynth arms, this built-in armor can be upgraded to provide an additional point of armor at a cost of 1500Cr. The armor upgrade does not change the appearance or shape of the arm, nor adds significant weight.

Characteristic Adjustments

Characteristics can be adjusted for any standard replacement arm. It is important to note that this adjustment is only for that arm and does not alter the overall strength and dexterity of an individual.

Characteristic Increase

Strength and Dexterity modifiers can be improved for standard arms. For each +1 increase the cost of the arm increases by 20%. A maximum of a +2 increase can be gained this way.

Characteristic Decrease

Strength and Dexterity modifiers can also be decreased for standard arms. For each -1 the cost of the arm decreases by 10%. A maximum decrease of -2 can be obtained this way.

Part Arm Replacements

In the instance that the lower arm requires a cybernetic replacement, then the cost for the selected arm is reduced by 40% and Option Slots reduced by 50%. Any Characteristic Adjustments will only be to a maximum of 1.

Branching

Branching modifies a standard arm with up to three smaller arms branching out from the arm's shoulder connection or from a location along the arm itself, increasing the rapidity of tasks or number of tasks being undertaken at the one time. They also allow the arm to be equipped with multiple tool packages without need to change over for each different task. Branching arms must use a standard arm as the base. Branching an arm will remove all option slots from the standard arm base.

Up to three branches to a standard arm may be added, each increasing weight to that arm depending on where on the main arm that branch is attached. To allow the support of increased arm weight, the body attachment point will be required to be significantly reinforced at an additional cost of 2500Cr per branch added. A small kinetically charged battery power pack is also installed to provide additional power for the modification.

If only one additional branch is added (bifurcated) then it can be designed to fold tight along the main arm when not in use for an additional 1500 HFCr.

Branch Type	Cost (HFCr) when located at:		STR and DEX Modification
	Top (shoulder)	Mid (elbow)	
Bifurcated	2500	3000	-1
Trifurcated	4500	5000	-2

Branching cannot be added to arms attached to fauxskin or biosynth standard arms.

Increasing or Decreasing Arm Size

A cybernetic arm can be increased in size to provide greater strength or reduced in size, reducing strength. Increasing an arm size will cost an additional 3500 HFCr. This includes the cost of strengthening the connection point at the shoulder (or elbow if a part replacement is required). The increase of arm size provides an additional Option Slot, +1 arm Strength and -1 arm Dexterity.

When an arm size is reduced there will be no additional cost for either the smaller arm or the surgery required to attach it. A smaller arm has one less Option Slot than the arm that would normally be installed to suit the recipient, reduces Strength of that arm by 1 and increases arm Dexterity by 1.

Strength and Dexterity of these arms can be further modified by using Characteristic Adjustments.

Embedded Handcomps

Handcomps are portable hand computers which allow the user to communicate using voice and text, connect to local worldnets, and perform a wide variety of other tasks using widely available software. See mindcomp software on p. 37-40 for examples.

Embedded handcomps are identical in function to the wearable type and are most often installed in the lower underside of the arm or the back of a hand under the skin. Embedded handcomps are much lighter, smaller, require less power than a wearable handcomp and are first available at TL 12 (see *Clement Sector Core Setting Book*, pages 202-204).

Embedded handcomps can also be connected to other devices via Option Links with the number of Option Links for each model of handcomp defined in the handcomp table below. Connecting a handcomp to sensors in a cybernetic arm or to allow a cybernetic eye to receive and display data are common device connections for those with these types of cyberware. For those with no other cyberware, contact lenses can allow for in-eye display should it be desired.

They can also take advantage of the added storage and bandwidth capacity of Implant Data Storage modules (see page 43) provided there is an Option Link available.

Embedded handcomps are also used by the military. See Milspec Mindcomps for further details.

Embedded Handcomp Types

Type	TL	Computer Type	Option Links	Cost (HFCr)
Type 2A	12	Computer/2	-	3000
Type 2B	12	Computer/2	1	3500
Type 3A	12	Computer/3	2	4000
Type 3B	12	Computer/4	2	4500
Type 4A	13	Computer/5	2	5500

Milspec Embedded Handcomps

Milspec quality embedded handcomps are not available for purchase in civilian markets but of course if one looks hard enough, long enough or has the right contacts they can be sourced. Treat the location task difficulty to find a seller (who may not have current stock) as Very Difficult. Cost will vary wildly but will be 5x – 10x the cost of the equivalent civilian type.

Embedded handcomps are more commonly used than mindcomps by Clement Sector military organization personnel but that usage will vary from system to system as they are tolerated only slightly more than other types of cyberware. Non-military intelligence personnel will also have Milspec handcomps. They will also self-wipe if hacked or tampered with or alternatively, a coded passphrase (spoken or even neural) can be used.

Personnel that muster out of the military will generally be able to retain their issued embedded handcomps. It will be up to the referee to determine if the character's home system military allow this.

Milspec handcomps have level 2 Firewall and Translation software integrated into the permanent memory of the handcomp. For intelligence personnel Agent and Intrusion software is additionally included. They are also impervious to EMP (See *Anderson and Felix Guide to Naval Architecture*, page 33).

Arm Options

Cybernetic arms can be fitted with options with the number allowable being described in the Arms Type table on page 20. Options are accessories that improve the function of the arm, provide additional tools or sensors for use (or even a weapon). Any option except for an integrated weapon can be installed twice providing enough Option Slots are available. Undertaking this might expand the internal volume of a storage or tool compartment or allow a set of different tools to be installed for example.

Where it is noted, some options will require additional power. To provide this, one of the available Option Slots will be needed for a rechargeable battery pack.

Embedded Handcomp

An embedded handcomp can be added into an arm. See page 23 for details of the different types available. Adding an embedded handcomp as an option does not require an Option Slot.

External Decorations

Having a bland looking metallic cybernetic arm is not for everyone so several types of external decorations are available. These can be added onto the arm in whatever design or pattern the owner desires and do not require an Option Slot.

External Decorations

Type	TL	Cost (HFCr)	Notes
Engraving	4	250	
Infill Engraving	5	500	
Coloring	6	400	
Fauxskin Tattooing	9	Varies	Price varies depending on size and complexity
Holographic Tattooing	10	Varies	Price varies depending on size and complexity
Biosynth Tattooing	12	Varies	Price varies depending on size and complexity

Storage Compartment

A storage compartment provides an internal space within the arm to store tools, equipment or other items and does not incur a cost. If the storage compartment is to be shielded from scans (-2 DM for standard scans) such as a customs security check, then the cost will be 3500Cr. Shielded compartments cannot be installed to a framework arm.

Tool Compartment

A tool compartment provides a tailored internal space within the arm to store a specific tool set or type and does not incur a cost. Each different type of tool set must have its own compartment.

Integrated Weapons

A pistol sized weapon can only be installed into a framework or standard basic cybernetic arm. For use the character must have the appropriate gun combat skill.

In a melee situation, a cybernetic arm can also be used as a weapon, acting as an unarmed strike.

Projectile

A pistol sized weapon can be installed into a standard basic cybernetic arm, which will remain hidden within the arm until required for use. With the exception of claws, all weapons are integrally fitted into the forearm. These are compact specialized weapons which cannot be used outside the arm and will cost more than an equivalent standard weapon. Further, the magazine of the integrated weapon is not compatible with the equivalent standard magazine for that weapon. Weapons can be equipped with gyrostabilizer, laser sights, laser telescope, secure weapon, silencer and intelligent weapon options as part of the weapon installation cost.

Integrated Standard Weapons

Weapon	TL	Option Slots	Damage	Cost (HFCr)	Magazine Size	Ammo Cost (HFCr)
Auto Pistol	8	1	2d6	600	40	35
Body Pistol	8	1	2d6	1500	20	55
Laser Pistol	11	2 ¹	4d6	3000	20	-
Snub Pistol	9	1	2d6	600	20	25
Stunner ²	10	2 ¹	Special	1800	5	-
Tranq ³	8	1	Special	300	10	30

¹ Requires Option Slot for rechargeable battery pack

² Renders a target unconscious for 1d6 hours. (Slug Pistol skill required)

³ See *Clement Sector: The Rules*, page 72 (Slug Pistol skill required)

Melee

Melee weapons are designed to be retractable and contained within the forearm until required for use. Daggers and blades can only be installed into a framework or standard basic cybernetic arm.

Claws are retractable modifications to a standard hand. If claws are equipped on both arms, the character gains an additional +1 DM to all Athletics (Coordination) rolls when climbing. This bonus will stack when using other climbing aids. Claws can be installed in a standard fauxskin or biosynth arm's hand at time of the cybernetic arms purchase, they cannot be installed after the initial purchase.

Melee Weapons

Weapon	TL	Option Slots	Damage	Cost (HFCr)
Claws (Retractable) ¹	8	1	Special	400
Dagger	8	1	1d6	400
Blade	8	2	2d6	450

¹ See *Clement Sector: The Rules*, page 189

Tools

Integrated tools can be fitted into a standard basic arm which can be used for diagnosis, fine repair and maintenance work. Tools fitted this way are necessarily small and compact and require the appropriate skill for their use.

Tool Sets

Type	TL	Cost (HFCr)
Electronic	9	8000
Engineer	9	8000
Forensic	9	6000
Mechanical	9	6000
Medical Instruments	10	15,000
Science	10	8000

Sensors

Sensors require one Option Slot with the sensor receptors fitted into the arms hand. These devices are not effective as equivalent larger sensors but still provide the user with a +1 DM to detect and interpret what data the sensor gathers. Sensors require the user to have a mind comp installed and Electronics (Sensors) skill.

Bioscanner

Bioscan sensors detect airborne pathogens and hazardous chemicals.

Densitometer

An outgrowth of gravitic technology, a densitometer can scan an area and plot variable densities, effectively creating a three-dimensional map of all objects.

Electromagnetic Detector

Electromagnetic Detectors are sensors that can detect unshielded high-power electrical devices such as gauss weapons or transmitters.

Geiger Counter

Geiger Counters detect the presence and intensity of radiation.

Mediscanner

A more compact and less capable version of the standard medical scanner, the mediscanner provides a +1 DM when applying medical treatment, including determining infections or disease. The user must have medical skill if using this sensor.

Sensors

Types	TL	Price (HFCr)
Bioscanner	10	250,000
Densitometer	12	30,000
Electromagnetic	9	2500
Geiger Counter	9	2500
Mediscanner	9	175,000

Hands

Standard arms come equipped with hands appropriately sized to the size of the arm which include appropriate haptic (touch) sensors. Sometimes though, the recipient of the cybernetic arm might require differing options.

Embedded Handcomp

An embedded handcomp can be added to a hand rather than the underside of the forearm. See page 23 for details of the different types available.

Large

Installing a large hand onto an arm reduces Dexterity by -1.

Micro Manipulators

Micro manipulators allow the arm recipient to undertake precision operations up to and including nanometer scale range. Such precision tools are fragile though and will not sustain rough handling and can be damaged if they are not protected when not in use. Micro Manipulators are also available as a Multi-tool option, often being stored in a tool compartment within the arm itself.

Micro Tendrils

Micro tendril manipulators can extend from the tips of the fingers of a standard hand allowing for extremely fine and microscopic manipulations. These allow the user with the appropriate skill to reduce any electronics or mechanical task check by two if that task is of a difficult nature or higher.

Multi-tool Socket

These can be installed in lieu of hands for specialist roles. This allows for a specific device for a specific task. The multi-tool socket allows tools or equipment to be quickly removed and replaced with another tool or device as a Minor Action.

Cyberware – Elias's Choice

Elias choice of cybernetic arm is a standard fauxskin with two available Option Slots. It costs 4500 HFCr.

Elias has organised with the interfacing team's Cybernetics technician to have an embedded handcomp added to his new arm. To make the arm look more like his old one, he adds a fauxskin tattoo costing 500 HFCr on the upper arm as identical as he can make it to the original.

Embedded Handcomp (without software) = 3000 HFCr

Fauxskin Tattoo = 500 HFCr

The total cost of his new arm will be $4500 + 3000 + 500 = 8000$ HFCr.

Tendrils

Essentially a long thin hand with elongated digits, tendrils are only marginally less effective at precise manipulations than a standard hand.

Tendrils are capable of being used as a weapon. In these instances, it acts as a blade. However, they are capable of non-lethal attacks by grappling. Tendrils being used in this manner provide the user with a +2 DM to all grapple attacks.

Hands

Hand Type	TL	Cost (HFCr)	Notes
Hook	2	30	Avast Me Hearties!
Handcomp (embedded)	12	See table on page 23	
Large	8	350	-1 DEX
Micro Manipulators	10	1500	Not available for biosynths
Micro Tendrils	12	8500	
Multi-tool Socket	9	400	Not available for biosynths
Tendrils	10	1000	+2 Grapple Attacks

Cost is per hand.



Legs

Like arms, artificial replacement of legs has evolved from crude wooden pegs, rigid tin legs and semi-articulated prosthetics into fully functional replacement limbs controlled by the recipient's nervous system and equipped with full tactile sensors. Non organic replacement legs are still a common choice due to the high cost of regeneration therapy and the equally high cost and limited availability of a sophisticated biosynth replacement.

Most commonly, standard legs are contoured to match the recipient's original limb including any Strength and Dexterity characteristics, however any leg shape can be purchased providing that it can be fitted without drastic modifications to the attachment point area. Most cybernetic clinics will not undertake such procedures, but clinics that are "less reluctant" to undertake the surgical procedures of this kind can be found if one is prepared to look.

Unless specified a standard replacement, leg will always have a standard foot. Biosynth leg replacements cannot be fitted with any leg or foot options.

Standard

Designed to match the original limb's contours, the standard leg is available in a variety of different types and can be configured with various options and modifications.

Leg Types

Leg Type	TL	Option Slots	Cost (HFCr)
Framework	7	4	2500
Standard Basic	8	3	3500
Standard Fauxskin	10	2	5500
Standard Biosynth	12	-	20,000

Framework

These are replacement legs devoid of even a hard skin or metal shell. Essentially skeletal (framework), they carry control and options circuitry within the frame. Any options added to them are visible for all to see. Only the feet (if equipped with such) of framework legs have tactile sensors. Framework arms are not weatherproof.

Basic

The basic limb replacement, though contoured to look like a leg, is unadorned by fauxskin or any other covering. These are relatively cheap to buy and can be customized with a variety of arm and hand options, such as surface decorations, a multi tool socket, and a weapon compartment. All basic limbs are weatherproof.

Fauxskin

Providing a soft and realistic looking covering for a replacement leg, fauxskin ensures the leg does not look like an obvious artificial construction. Fauxskin can be customized to replicate the skin tone and skin type of any creature.

Early versions of fauxskin are first available at TL8 costing twice that listed on the table above. At TL10 fauxskin is indistinguishable at a distance from biological skin. At TL11 fauxskin is only distinguishable after a detailed visual inspection.

Biosynth

Available at TL 12, a biosynth leg has body warmth, a pulse can be felt, and the skin can color or change in reaction to external stimulus. Biosynth skin and underlying dermal layers will also bleed when damaged and can “self-heal” any minor wounds, cuts and abrasions exactly like the original leg it is replacing. Treat the entire biosynth leg as having the same touch senses as a biological leg. They do not have Option Slots and the foot cannot be modified.

Adding Armor

Standard cybernetic legs are armored to an equivalent of jack, providing 1 point of armor that can be added to an individual’s armor total. With the exception of biosynth legs, this built-in armor can be upgraded to provide an additional point of armor at a cost of 7500 HFCr. The armor upgrade does not change the appearance or shape of the leg, nor adds significant weight.

Characteristic Adjustments

Characteristics can be adjusted for any standard replacement leg. It is important to note that this adjustment is only for that leg and does not alter the overall strength and dexterity of an individual.

Characteristic Increase

Strength and Dexterity modifiers can be improved for standard legs. For each +1 increase the cost of the leg increases by 25%. A maximum of a +2 increase can be gained this way.

Characteristic Decrease

Strength and Dexterity modifiers can also be decreased for standard legs. For each -1 the cost of the leg decreases by 15%. A maximum decrease of -2 can be obtained this way.



Part Leg Replacements

In the instance that the lower leg requires a cybernetic replacement, then the cost for the selected leg is reduced by 40% and Option Slots reduced by 50%. Any Characteristic Adjustments will only be to a maximum of 1.

Leg Options

Cybernetic legs can be fitted with options with the number allowable being described in the Legs Type table on page 31. Options are accessories that add extra functions to the leg, provide additional tools or sensors for use (or even “holster” space for a weapon). Any option can be installed twice providing enough Option Slots are available. Undertaking this might expand the internal volume of a storage or tool compartment or allow a set of different tools to be installed for example.

Where it is noted, some options will require additional power. To provide this, one of the available Option Slots will be needed for a rechargeable battery pack.

Claws

Claws are retractable modifications to a standard foot. If claws are equipped on both legs, the character gains an additional +1 DM to all Athletics (Coordination) rolls when climbing. If both legs and arms are equipped with claws, then the modifier is +2. This bonus will stack when using other climbing aids. Claws can be installed in a standard fauxskin or biosynth leg's foot at time of the cybernetic legs purchase, they cannot be installed after the initial purchase.

Claws

Weapon	TL	Option Slots	Damage	Cost (HFCr)
Claws (Retractable) ¹	8	1	Special	500

¹ See *Clement Sector: The Rules*, page 189

External Decorations

Though less obvious for a leg than an arm, having a bland looking metallic cybernetic leg can be finished with a choice of several types of external decoration types. These can be added onto the leg in whatever design or pattern the owner desires and do not require an Option Slot.

External Decorations

Type	TL	Cost (HFCr)	Notes
Engraving	4	450	
Infill Engraving	5	800	
Coloring	6	700	
Fauxskin Tattooing	9	Varies	Price varies depending on size and complexity
Holographic Tattooing	10	Varies	Price varies depending on size and complexity
Biosynth Tattooing	12	Varies	Price varies depending on size and complexity

Storage Compartment

A storage compartment provides an internal space within the leg to store tools, equipment or other items and does not incur a cost. If the storage compartment is to be shielded from scans (-2 DM for standard scans) such as a customs security check, then the cost will be 3500Cr. Shielded compartments cannot be installed to a framework leg.

Tool Compartment

A tool compartment provides a tailored internal space within the arm to store a specific tool set or type and does not incur a cost. Each different type of tool set must have its own compartment.

Weapon Compartment

A weapon compartment is a concealed mount for a pistol sized weapon which can be accessed by neural impulse as required. Using the weapon is treated as a minor action, identical to drawing a holstered weapon. For the weapon to be accessed any clothes worn must accommodate accessibility. The weapon compartment costs 1000Cr and uses one Options Slot.

At TL10 a weapon compartment can also incorporate an autoloader, which will reload the weapon when “holstered”. This reloading action requires one combat round. The autoloader requires one Options Slot at a cost of 1500Cr.

Leg Options

Type	TL	Option Slots	Cost (HFCr)	Notes
Claws (Retractable)	8	1	500	
External Decorations	-	-	Varies	See Table on page 34
Storage Compartment	8	1	3500	Cost is for shielded compartment
Tool Compartment	8	1	-	Does not include cost of Tools
Weapon Compartment	9	1	1000	
Weapon Autoloader	10	1	1500	

Feet

Standard legs come with feet appropriately sized to the size and style of the leg as standard. So that if the cybernetic leg was intended as a replacement for an uplift, the foot would be appropriate to that uplift’s leg.

Almost all customization to feet require that both legs are cybernetic replacements. To facilitate this, a multi-option socket (see below) must be installed on both legs (ankle joint). Biosynth feet cannot be modified.

Bladerunner

These are specialized foot replacements made out of carbon fiber polymer composites which store kinetic energy from the wearer’s steps as potential energy, like a spring, allowing the wearer to run faster and jump higher. Movement rate when using bladerunners increases up to 50% with a +1 DM to all Athletics (Endurance) skill rolls.

Bladewheels

Bladewheels replace the feet with inline wheels allowing the wearer to triple their movement rate. They also provide +1 Dexterity and a +1 DM to all Athletics (Endurance) skill rolls.

Climbing Cleats

This option provides the user with extendable cleats to assist climbing. If the user has two cybernetic legs climbing cleats provide a +1 DM to all Athletics (Coordination) rolls when climbing all but the smoothest surfaces.

Magnetic Soles

The soles of each foot are able to be magnetized so to allow the user to walk normally spacecraft that have no active artificial gravity. An Option slot in the leg must be provided for a kinetically charged battery pack to provide additional power to the magnetic soles.

Multi-option Socket

These must be installed in to allow changeover of the foot for something more suitable or for certain situations. The multi-option socket allows a foot type to be removed and replaced with another type as a Major Action if the character decides to carry such an alternative. However, the ability to be flexible can be an advantage.

Feet

Hand Type	TL	Cost (HFCr)	Notes
Peg	2	30	Splice the Main Brace!
Bladerunner	8	1000	See Description
Bladewheels	9	1200	See Description
Climbing Cleats	9	500	+1 DM to Climbing skill roll
Magnetic Soles	9	600	Requires battery power
Multi-option Socket	9	900	Required for options

Cost is per foot.

3. Head

Mindcomps

Mindcomps, powered by the electrical field of the user's body, are the ultimate in portable computer technology. Functioning identically to any other computer, the mindcomp however, is controlled by the user's brain rather than by hand input or holographic display. Mindcomps are placed inside the user's skull within a small bio-socket and display collated data, sensory data and recalled information directly to the user's brain. Mindcomps are the most common cybernetic device used in Clement Sector.

This information can only be seen by the user and is immensely convenient to users almost constantly in connection with a worldnet on more civilized worlds. However, it is not without risk with a small minority of users that report feeling depressed or isolated when the mindcomp is no longer in constant connection with a worldnet such as on a frontier world or in deep space.

All mindcomps include the ability to communicate using voice or text, connect to the worldnet or perform a wide variety of tasks using available software. In addition, all mindcomps have the ability to directly interface with other computers creating a direct neural link between the computer and the user. This allows the user to manipulate a connected computer at a faster speed than with his/her hands. Interacting with a computer in this fashion gives the character a +1 to any computer related task.

In addition, some worlds such as Harrison (Sequoyah 0805) have banned the use of mindcomps and any mind enhancing device. Other worlds such as Kingston (Hub 0106) require a mindcomp to be installed in all citizens and use the mindcomp to monitor and, some believe, control their citizens.

Mindcomp Implant Types

Type	TL	Computer Type	Option Links	Cost (HFCr)
Type 1A	11	Computer/2	-	30,000
Type 1B	11	Computer/2	1	40,000
Type 2A	11	Computer/3	2	60,000
Type 2B	12	Computer/3	4	80,000
Type 3A	12	Computer/4	2	100,000
Type 3B	12	Computer/4	4	200,000
Type 4A	13	Computer/5	2	350,000

Mindcomp Software

Unlike normal computer software, mindcomp software can be used not only to run programs but also to improve the user. Some of the available programs are listed here.

Skill Software provides the same function as learned Skills. If Implant Data Storage Modules are used to store skill software, then that skill software cannot be used until it is completely loaded into the active memory matrix of the mindcomp. This will slow the execution of the program and subsequently use. The delay will only be very slight so treat that delay as increasing the task duration slightly, however that time delay could be crucial to an outcome. Mindcomps cannot run robot task software.

Agent (TL 10)

Agent software packages provide a mindcomp with a degree of intelligence and can allow it to carry out any tasks assigned to them that require the use of the Electronics (Computers) skill. Once given instructions, the program acts independently to attempt the task requested. The amount of bandwidth used by the program determines the program's skill level.

Agent

Bandwidth Type	Cost (HFCr)	Skill Level Enabled
0	500	1
1	2000	2
2	4500	3

Avatar (TL 11)

An avatar is a holographic projection, usually of a small humanoid, that can be used as a personalized interface with the mindcomp and is only seen and heard by the user. Avatars provide the role of digital assistant and are fully customizable with a variety of appearances and voices, cost 1200Cr and require a bandwidth of 1.

Database (TL 7)

This software package is a collection of several databases that can be searched with an Electronics (Computers) check or using an Agent package. The program automatically attempts to update itself whenever a system's worldnet (Clement Sector Core Setting Book page 235) is within range. This information usually includes basic information about the system, news, alerts and other information. Some world governments will also use this information upload to spread propaganda while other worlds will limit the amount of information given. Database core data costs 10,000Cr and requires a bandwidth of 1.

Drone Control Software

This is software required by the Drone Control Interface Module, available as an expansion option for mindcomps. The software allows the user to control a number of drones equal to the computer rating of their mindcomp. Drone Control software requires a bandwidth of 2 and is included in the cost of the Drone Control Interface Module.

Firewall (TL 10)

This software can be used to defend against intruder attacks on the mindcomp from other devices. Firewall can be purchased to run at a variety of bandwidths. Programs taking up more bandwidth are more effective at preventing intrusion by enemy Agent programs.

The following chart shows Firewall programs. Agent programs attempting to access a mindcomp protected by a firewall must make a successful task roll against the difficulty shown for that program. It is highly recommended that users with mindcomps include this software and ensure it is running within active memory at all times.

Firewalls

Bandwidth Type	Cost (HFCr)	Difficulty
0	1000	Difficult
1	3000	Very Difficult
2	7000	Formidable

Intellect Improvement (TL 11)

This program provides the ability for the user to improve the speed at which they think. This, in turn, boosts the character's INT score.

Intellect Improvement

Bandwidth Type	Cost (HFCr)	Effect
0	15,000	+1 INT
1	30,000	+2 INT
2	60,000	+3 INT

Intrusion (TL 10)

Intrusion software is designed to assist Agent software or the user in defeating Firewall software. Intrusion can be purchased to run at a variety of bandwidths. Intrusion assists by lowering the difficulty to defeat the Firewall.

Intrusion software is illegal on any world with a Law Level of 5+.

Intrusion

Bandwidth Type	Cost (HFCr)	Effect
0	20,000	-1 Difficulty
1	40,000	-2 Difficulty
2	75,000	-3 Difficulty

Navigation Software (TL 10)

Navigation software allow the use of downloaded navigation maps that can display data within the users mind. Navigation software provides a +1 DM to all Navigation skill rolls, costs 2500Cr and uses a bandwidth of 1.

Skill Software (TL 11)

These are programs which allow for the character to use a skill at a certain level. This software can be purchased for any skill listed in the Clement Sector Core Setting, Clement Sector: The Rules, supplements or this book.

Skill Software

Bandwidth Type	Cost (HFCr)	Skill Level
0	500	Skill Level 0
1	8000	Skill Level 1
2	16,000	Skill Level 2
3	32,000	Skill Level 3

Targeting Program (TL 11)

This is a program which will assist in firing in a weapon by using the holographic visual interface as a targeting sight.

Targeting Program

Bandwidth Type	Cost (HFCr)	Effect
0	500	+1 Hit
1	1000	+2 Hit
2	2000	+3 Hit

Translation (TL 8)

Translation software has been a staple of early handcomps, and it was natural that this standard software was added to the software available for mindcomps. Those using the programs should attempt to understand spoken language with the following task:

To translate spoken language: Language, 1-6 seconds, Average (+0)

The skill level of the translation program should be used rather than the skill level of the user. Translation programs for mindcomps are priced as listed on the chart. All translation software uses a Bandwidth of 1.

Translation

TL	Cost (HFCr)	Skill Level in Language
11	2500	1
11	3000	2
12	3500	3

In addition, at TL 12 mindcomps will allow the user to lower the difficulty of the task to Routine (+2).

Milspec Mindcomps

Milspec quality mindcomps are not available for purchase in civilian markets but of course if one looks hard enough, long enough or has the right contacts they can be sourced. Treat the location task difficulty to find a seller (who may not have current stock) as Formidable. Cost will vary wildly but will be 5x – 10x the cost of the equivalent civilian type.

How widespread the issuing of Milspec mindcomps to military personnel will vary from system to system. Some systems only offer mindcomps to senior enlisted personnel and officers, some to officers only, others to all personnel and some like Harrison (Sequoyah 0805), to none. Non-military intelligence personnel will also have Milspec mindcomps. Milspec mindcomps will also self-wipe if hacked or tampered with. Alternatively, a coded neural passphrase can be used.

The Hub Federation for example provides Milspec mindcomps to all serving personnel. This is a reflection not only of the Federation's immense wealth or that the Federation is bi-language (German and English) but the fact that both arms of the military believe mindcomps improve fighting efficiency for their personnel.

Personnel that muster out of the military will generally be able to retain their issued mindcomps. It will be up to the referee to determine if the character's home system military allow this.

Milspec Mindcomps can be TL 11 or TL 12 type beta models that have integral level 2 Firewall and Translation software. For intelligence personnel Agent and Intrusion software is additionally included. They are also impervious to EMP (See *Anderson and Felix Guide to Naval Architecture*, page 33).

Option Link

Option Links are interfaces used to upgrade the mindcomp or to attach nano-connectors for other data gathering sources such as cybernetic eyes or ears. Each different type of mindcomp will have a set amount of inbuilt Option Links.

Option Link Expander Node (TL 12)

The number of mindcomp Option Links can be expanded using an expander node. Costing 20,000 HFCr, the node uses one of the mindcomps Option Links and adds two more Option Links.

Drone Control Interface Module (TL 11)

A drone control interface Module provides necessary hardware to control drones. This allows the mindcomp to control a number of drones equal to its computer rating. Software is provided with the Module. A Drone Control Interface Module costs 25,000 HFCr and requires one Option Link.

External Access

Mindcomps require an external access to enable routine maintenance, repair and upgrades of the implant. There are two types of access available.

External Access Port

A visible clue that the person has a mindcomp, the external data port provides an external connector for external data feeds and physical connection to computers or suitable electronics. The data port can be removed to allow the mindcomp to be accessed or removed from its internal bio-socket. An External Access Port is available at TL 11 and costs 5500Cr.

Cosmetic Implant Cover

Most mindcomp users elect to have a fauxskin cover over the mindcomp and with the fauxskin perfectly matched to the surrounding skin and hair, the cover is virtually invisible. The cover can be removed to allow complete access to the mindcomp inside its bio-socket as required. A Cosmetic Implant Cover is available at TL 11 and costs 2500 HFCr.

Neural Comm (TL 12)

A neural communicator allows the user to communicate messages and engage in conversations using thought rather than speaking. Neural comms can also transfer data stored in the connected mindcomp via neural command and in turn receive data from outside sources via a local network or worldnet. They cannot be installed without a mindcomp and require one Option Link.

Neural Comms

Type	TL	Option Link	Cost (HFCr)	Range
Type A	12	1	15,000	Very Distant
Type B	13	1	25,000	Extreme

Implant Data Storage modules

Only a few millimeters in size, Implant Data Storage modules can be added to the mindcomp to provide additional storage capacity (bandwidth) for both software and data. Each module that is added to a mindcomp will require an option link. A removable module is available at TL 11.

A Data Storage Module will also enhance the user's Education for purposes of task rolls when accessing data or using appropriate mindcomp software.

Implant Data Storage Module Types

Storage Type	TL	Storage Provided	Cost (HFCr)	Effect
Standard	11	1	25,000	+1 EDU
Advanced	11	2	50,000	+1 EDU
Removable	11	2	80,000	+1 EDU
Standard	12	2	60,000	+2 EDU
Advanced	12	3	90,000	+2 EDU
Standard	13	3	120,000	+3 EDU

Eyes

Cybernetic eyes directly interfacing with the brain via a new neural interface or the original eyes optic nerve become widely available at TL 9. Improvements in technology lead to more advanced versions allowing optical modification to allow wearers to see via infrared, use low light ability and use macro without further aid.

Some cybernetic eye options require the presence of a mindcomp to assist processing and data storage.

Standard

Standard cybernetic eyes provide the recipient with normal vision. They offer no Option slots so to add enhancements or modifications. Standard cybernetic eyes can be designed to look like human eyes or any other species the recipient might be desire.

Advanced

Advanced cybernetic eyes allow for additional optical modifications to be added to further enhance vision. This might be IR, Light Amplification or Micro capability. Advanced cybernetic eyes can be designed to look like human eyes or any other species the recipient might be desire. Additionally, an Option Link connector allows for the eye to be connected to an installed mindcomp.

Biosynth

Perfect replicas that exactly mimic the actions of the original eye(s). The pupils react to differing light levels and they can produce tears depending on emotion. Further, they can have modifications made to enhance vision over normal human vision but no other optical options, such as recording or adaptive modifications, can be chosen.

Eye Types

Type	TL	Option Slots	Cost (HFCr)
Standard	9	-	15,000
Advanced Type A	10	2	12,000
Advanced Type B	11	3	15,000
Advanced Type C	12	4	20,000
Biosynth	12	2	35,000

Optical Options

Adaptive Appearance

Adaptive Appearance enables the wearer to change eye color or iris shape at will. This can be done via external input into the mindcomp at a cost of 150Cr per template or via templates previously saved into the mindcomp's memory.

Adaptive Retina Patterning

Adaptive Retina Patterning provides the cybernetic eye with a duplicate of a real retina. To achieve this pattern of an actual retina pattern is required. Copying a retina pattern to a cybernetic eye that is not one's own is illegal throughout Clement Sector. However, patterns can be bought at great expense illegally. There is no retina pattern cost if using your own and obtaining another pattern illegally will cost at least 75,000Cr. Retina patterns are saved into the mindcomp's memory.

Appearance Matching

Cybernetic eyes can be designed and produced to perfectly match the recipient's original eye(s) or indeed any other appearance desired. This will add 25% to the cost of the eye type selected.

Infrared Vision

Infrared allows perception of heat radiation.

Micro Vision

Micro enables an eye with the ability to enlarge very small objects visually. A single installation of this option can enlarge up to 100x with each additional installation (each requiring an Options Slot) doubling that magnification up to 1600x.

Night Vision

Enables vision in near total darkness.

Polarizing Shield

Designed to polarize in sudden bright changes of light, Polarizing Shields protect cybernetic eyes from damage. For example, they can be added to night vision equipped advanced cybernetic or biosynth eyes.

Targeting Assistance

This is an overlay that allows assistance in firing in a weapon by using projecting a holographic visual interface as a targeting sight. Targeting Assistance provides a +1 DM to all ranged shots. This can be additionally coupled with the Zoom option and any weapon equipped Intelligence interface. Targeting Assistance requires an additional Options Slot for a light charged battery to provide extra power.

Ultraviolet Vision

Allows for the perception of ultraviolet light. This is a specialist vision option used in forensics and law enforcement roles.

Video or Holographic Recording

This option enables the eye to record visual data in any spectrum that the eye has options for with all data recorded to the mindcomp to be played back neurally or downloaded for external playback as required. Holographic recorders will require the use of two eyes and both recording options require an additional Options Slot for a light charged battery to provide extra power. Coupling this option with the Audio recording audio sensor option will provide any recording with sound.

Zoom Vision

Zoom provides long distance capability to a cybernetic eye. A single installation of this option allows magnification up to 10x with each additional installation (each requiring an Options Slot) doubling that magnification up to 160x.

Optical Options

Sensor Type	TL	Option Slots	Price (HFCr)
Adaptive Appearance	11	1	5000
Adaptive Retina Patterning	11	1	20,000
Appearance Matching	9	1	+25% Eye Cost
Infrared Vision	9	1	1000
Holographic Recording	10	2	10,000
Night Vision	9	1	1000
Micro vision	9	1	1000
Polarizing Shield	9	1	500
Targeting Assistance	11	2	5,000
Ultraviolet Vision	9	1	1000
Video Recording	8	2	1000
Zoom Vision	9	1	1000

Price is per eye

Ears

Standard

Rudimentary versions of artificial hearing are made available at TL 7. These are battery powered devices either in the form of a hearing aid (or later a cochlear implant that required surgery to install). Improvements in technology allowed the implant to be powered by the body's electrical field and more advanced versions of these early, more efficient implants are still available as a standard option.

Standard cybernetic audio sensors provide the recipient with normal hearing. They offer no Option Slots so to add enhancements or modifications.

Advanced

Advanced audio sensors allow for additional audio modifications to be added to further enhance hearing. They can also be connected to one of a mindcomps Option Links.

Audio Sensor Types

Type	TL	Option Slots	Cost (HFCr)
Standard	9	-	5000
Advanced Type A	10	2	7500
Advanced Type B	11	3	10,000
Advanced Type C	12	3	8000

Audio Sensor Options

Audio Recorder

A simple voice recorder that will record directly to mindcomp memory. This can be replayed neurally or transferred to an outside source.

External Ear Appearance Matching

Though external ears are usually bio-printed or regrown, an external ear can be produced to perfectly match the recipient's original ear(s) or indeed any other appearance desired. These are usually fauxskin or biosynth.

Type	TL	Cost (HFCr) per Ear
Fauxskin	9	1500
Biosynth	12	4000

Infrasonic

Infrasonic is well below a typical human's perception frequency but can be heard by many uplifts and animals. These are usually deep frequencies broadcast across long distances.

Ultrafine

Providing far more audio sensitivity, Ultrafine sensors allow for picking up the faintest sounds at all levels of atmospheric pressure.

Noise Filter

Noise Filtering allows the isolation and extraction of individual sounds by filtering out background and other extraneous noises.

Soundburst Shield

Similar in concept to Polarizing Shields, Soundburst Shields protect audio sensors from damage. They can be added to Standard audio sensors or added to Ultrafine equipped Advanced audio sensors.

Ultrasonic

Ultrasonic is well above a typical human's perception frequency but can be heard by many uplifts and animals. These are usually very high frequencies broadcast across long distances.

Audio Sensor Options

Sensor Type	TL	Option Slots	Cost (HFCr)
Audio Recorder	8	1	500
Infrasonic	9	1	1000
Noise Filter	9	1	1500
Ultrafine	10	1	1500
Ultrasonic	9	1	1500
Soundburst Shield	9	1	750

Olfactory

A replacement nose will always be replaced with a bio-printed replacement using the recipient's own cells; however, the sense of smell can be replaced or enhanced using a cybernetic implant.

Standard

Standard olfactory sensor implants provide human equivalent ability to smell. These are the most common implant used in Clement Sector when the ability to smell is lost because of disease or trauma.

Advanced

Advanced olfactory sensor implants double the sensitivity of standard olfactory sensor implants, providing a detection DM to locating or identifying what is causing "that" particular smell.

Olfactory Sensor Types

Type	TL	Cost (HFCr)	Detection Mod
Standard	8	1500	-
Advanced Type A	10	4000	+1
Advanced Type B	12	8000	+2

4. Body

The Medi-implant

One of the most common body implants in Clement Sector is the medical dispenser which is usually installed in the torso. Similar in effect to combat armor medical suites, this type of implant allows the user to dispense via neural command a variety of drug and medication dosages as required. A physical trigger can also be used to dispense a single drug type only. This trigger might be a jaw clench or biting down hard on a tooth. Medi-implants can be resupplied as required via a small external access.

By TL 11 a medical implant, if installed into a person with a mindcomp, can monitor the body's physical condition via software within the implant. This allows the mindcomp to automatically dispense appropriate dosages of drugs if it detects injury, illness or excess fatigue and stress levels. These settings can be fully configured via the mindcomp.

Medi-implants are prohibited in Clement Sector unless authorized by medical authorities to be used to regularly maintain medication to treat a non-curable ailment or injury. This does not prevent them being used illegally or by Special Forces elements of the military though.

If attempting to source a Medi-implant illegally then the outlay will be up to 10x the listed cost. This will be dependent on the law level and cultural disposition of the world the attempt to source one is made on.

Medi-Implants

Type	TL	Cost (HFCr)	Doses
Basic Auto Injector	9	500	2
Standard Auto Injector	10	1500	4
Medical Implant	11	3000	4
Medical Implant	12	5000	6
Medical Implant	13	7500	7

For drug types and costs per dosage, refer to *Clement Sector: The Rules* pages 56 – 57.

Subdermal Armor

Subdermal armor adds an interwoven network of ballistic fibers inserted just under the skin along with bone strengthening to provide additional armor protection. The additional protection of subdermal armor adds to the total armor of an individual.

Subdermal Armor

TL	Protection	Cost (HFCr)
10	1	60,000
11	2	90,000
12	3	120,000
13	4	180,000

Improved Subdermal Armor

An upgraded version of standard subdermal armor, improved subdermal armor provides enhanced ballistic protection and bone strengthening. Additionally, internal organs are protected by advanced polymer armor. Like standard subdermal armor, improved subdermal armor still adds to externally worn armor protection, but cannot be installed alongside subdermal armor options.

Improved Subdermal Armor

TL	Protection	Cost (HFCr)
12	4	300,000
13	5	750,000

Both these very expensive and invasive types of cyberware are expressly illegal in many systems in Clement Sector and there are no legal clinics or medical facilities that will provide this type of cyberware as an interface option. However, this does not stop them being available if one looks hard enough or pays enough money to the right people. Locating such services will always be a Formidable task difficulty.

Options

Subdermal armor can have any one of the following options added to it. These can also be installed as single choice standalone subdermal armor.

Anti-Las

This is an additional layer of armor additional layer made from reflecting material. Anti-las also include appropriately located heat absorbing gel packs provide additional initial +2 protection for subdermal armor against laser weapons. If the wearer is hit by a laser weapon again anti-las only provides +1 protection. A third hit will have no armor protection at all.

Anti-Melee

Thin plates of high impact absorbing polymer armor inserted over the body to provide +2 protection against melee attacks and +1 damage against blade attacks. Anti-Melee plates are very obvious to any observer and will attract unwanted and very close attention of security personnel on all but the most lawless of worlds.

Anti-Shock

Similar to anti-las, anti-shock is an insulating layer designed to negate or reduce the effects of a stunner weapon. Any stun weapon damage is reduced by 50% before being applied to the wearers Endurance.

Armor Options

TL	Type	Cost (HFCr)
13	Anti-Las	70,000
11	Anti-Melee	30,000
12	Anti-Shock	60,000

Elias's Story Revisited - Twelve Months On

It is now twelve months since Elias received his new cybernetic arm. This means he must have the first of his annual follow on counselling sessions to determine if his diagnosed cyberpsychosis (Post Interface Trauma Stress) tendency does not become a potential problem. Elias has an END of 9 (+1).

He still receives additional +1 for volunteering for the interfacing but has not been to additional counselling or taken medication for his diagnosed tendency. Being his first full year using his new cybernetic arm he also gains an additional +1.

Tendency Avoidance task roll = $7 + 1 + 1 = 9$

The successful task result means that the counselling was successful for that year, but must continue to have annual counselling sessions, re-rolling each time to see if the tendency does not become a potential problem. If the tendency does flare up, then he will need to undergo treatment so to deal with the condition permanently. Elias decides to undergo treatment to rid himself of this "lurking shadow" permanently. As there is no medical component to his cyberpsychosis, a medical specialist is not required. His psychologist has Science (Psychology) 3 and INT 12 (+2).

Science (Psychology), INT, 1-6 weeks, Difficult (-2)

Her task roll to treat Elias is $7 + 3 + 2 - 2 = 10$ (an effect value of 2). This is a fantastic result for Elias as the intensive 4 week long counselling has uncovered the root causes of his Post Interface Trauma Stress, explored those causes and resolved them to the satisfaction of his specialist. Elias can move on with his life without that "shadow" lurking in the background.



5. The Cyberneticist Career

Making a career within the cybernetics industry can be a rewarding one. Cyberneticists provide the technical expertise while working alongside specialist medical professionals undertaking interface procedures and work in design and development of cybernetic devices.

Cyberneticist engineers explore the theories developed by scientists and turn those theories into practicality, further innovating on existing technologies to make them even better and cheaper.

Cyberneticist technicians translate new designs and developments into working cyberware, often improving them further.

Education and Qualifications

Engineers

Like all engineers, a cyberneticist engineer must undertake and pass formal qualification courses at both an Undergraduate College and a Graduate College (Universities). This can be determined by referring to the *Clement Sector Setting Book*, page 93.

A failed graduate course result will see entry into the chosen discipline as a technician until another opportunity arises to achieve higher education at a later date.

Technicians

Technicians are college educated professionals who construct, maintain, calibrate and assist medical cyberneticists to interface cyberware. Such highly experienced individuals are highly sought after by medical facilities and cyberware companies.

Technicians must have attended an undergraduate college (*Clement Sector Setting Book*, page 93)

Both Engineers and Technicians can gain further qualifications as their career progresses.

New Skills

The following skills are specifically for the field of cybernetics which encompasses all types of cyberware.

Medic (Cybernetics)

Specializing in the surgical installation of cyberware (known as “interfacing”) and are available as a choice in the standard Medic career path on page 141 of the *Clement Sector Core Setting book*.

Trade (Cybernetics)

Specializing in the design and assembly of cyberware components, a person with this skill is also required to be present during attachment or installation surgery. This skill is available as part of the Cyberneticist career path on page 55.

Existing Skills

Two existing skills from *Clement Sector: The Rules* (pages 45 – 52) are also of relevance and can be used as a substitute for Trade (Cybernetics) if a character has that skill and is required to assist in repair or maintenance work. It is recommended the referee impose a -1 DM to all task rolls when removing complex cybernetic devices and internal implants if these skills are used.

Electronics (Robotics)

Science (Cybernetics)

CYBERNETICIST CAREER PATH

Enlistment: INT 8+

If you have an apparent age of over 40, take a -2 modifier to this roll. Take a -1 modifier for each career you have entered previous to this one.

Discipline: Choose from the following:

Engineer – Working closely with Biomechanical engineers and medical professionals you are a specialist in the design and development of new cybernetics.

Technician – You work in biomechanical companies constructing cyberware components and assemblies. You also work within cybernetic clinics and other medical centers assisting medical professionals to interface cyberware.

Career Progress

Discipline	Survival	Advancement
Engineer	INT 6+	EDU 7+
Technician	INT 5+	EDU 7+

Promotion: Appropriate education level and EDU 8+

Mustering Out Benefits

Roll	Cash	Other Benefits
1	500	+1 INT
2	1000	+1 INT
3	2000	+1 EDU
4	5000	Contact
5	5000	Contact
6	10000	2 Contacts
7	20000	+1 SOC

Skills and Training

Roll	Personal Development	Professional Skills	Advanced Education (Minimum EDU 8+)
1	+1 EDU	Drive (Any)	Electronics (Computer)
2	+1 DEX	Trade (Cybernetics)	Electronics (Robotics)
3	+1 INT	Electronics (Computer)	Electronics (Sensors)
4	+1 INT	Flyer (Any)	Electronics (Robotics)
5	+1 EDU	Mechanic	Engineering (any)
6	+1 SOC	Investigate	Electronics (Computer)

Roll	Discipline: Engineer	Discipline: Technician
1	Science (Cybernetics)	Trade (Cybernetics)
2	Engineering (Nanotech)	Electronics (Robotics)
3	Science (Any Life)*	Trade (Cybernetics)
4	Electronics (Robotics)	Science (Cybernetics)
5	Admin	Engineering (Nanotech)
6	Science (Any Physical)*	Trade (Cybernetics)

*Life – Biology, Cybernetics or Genetics,

*Physical – Physics, Chemistry, Robotics or Planetology

INTERFACE: CYBERNETICS IN GLEMENT SECTOR

Levels and Benefits

Level	Engineer	Benefit	Technician	Benefit
0	Junior Engineer	Engineer (Cybernetics) 1	Trainee	Electronics (Computer) 1
1	Engineer	Trade (Cybernetics) 1	Junior Technician	Trade (Cybernetics) 1
2			Technician	
3	Senior Engineer	Admin 1	Senior Technician	Admin 1
4	Project Manager		Team Leader	
5	Manager	Leadership 1	Senior Technician (Design)	
6	Director	+1 SOC	Senior Team Leader	Leadership 1

Mishaps

2d6	Mishap
2	Severely Injured. Roll twice on the injury table (Core Setting Book, p.192).
3	You have been accused of professional negligence where a cover up of serious issues with an implant has resulted in several deaths caused by failed interfacing. Lose 2 benefit rolls.
4	Budget cuts have caused many to lose their employment with your organization. Sadly, you are among them. Roll SOC 8+. If you fail, you take redundancy (muster out) as usual. If you succeed, gain a +2 modifier to enter another career as your manager writes a letter of recommendation.
5	You are accidentally exposed to radiation. Lose 1 END.
6	Your continued rivalry with your department head has finally reached an impasse. They have sought to end your career numerous times and have finally done so. Gain 1 Rival.
7	Injured. Roll on the Injury Table (Core Setting Book, p.192).
8	During a long road trip to a local cybernetic facility, the vehicle crashes. You have been injured (Core Setting Book, p.192) and will be forced to retire from your job due to your injuries.
9	You have become involved in a love affair with a workmate. Unfortunately, this has placed you in the sights of a jealous rival with more seniority within the company. Now, this rival has arranged for your position to be made redundant and you along with it. Gain 1 Enemy.
10	The catastrophic failure of a new project has resulted in a massive financial loss and you have been blamed along with your entire design and development team. Roll on the Injury Table (Core Setting Book, p.192). You are sacked from your job following a lengthy review by a professional inquiry board. Roll SOC 8+. If you succeed, you are simply sacked with no severance pay. If you fail, you will also lose 2 Benefit rolls.
11	During an HR interview after an altercation with a junior staffer, you have been deemed to be unfit to maintain your managerial position. Despite all of your protestations to the contrary, the company not only forces you to leave its employ but also puts a stain on your record. Take a -2 modifier to enter any engineering, science or medical career after leaving your job.
12	A court of criminal investigation finds you guilty of participating in industrial espionage. The organization you work for dismisses you immediately. Lose all Benefit rolls. Roll SOC 8+. If you succeed, you are simply sacked. If you fail, you will spend 1d6 years in prison and gain a level in Streetwise.

INTERFACE: CYBERNETICS IN CLEMENT SECTOR

D66	Events
11	Disaster Occurs. Roll on the Mishap table, but you are not ejected from the career.
12	You have been recognized by your company for exemplary service. Gain 1 Benefit roll.
13	A local University Technical Annex has approached you with an offer to undertake a secondment to spend part of the next term as a lecturer. Gain 2 Benefit rolls and a level in Instruction.
14	You have been chosen for a professional training course. Make a roll on the Advanced Education table.
15	You have been selected for inter-discipline cross-training in Cybernetics Engineer or Medic (See Clement Sector Settings Book, page 142). Choose a Discipline table and roll for 1 Skill.
16	Your new director is extremely strict and expects design procedures to be done by the book – his way. It's a difficult time for you but you complete a project on time and on budget. Gain 1 level in a specialist skill you already possess.
21	You catch a fellow team member undertaking something dangerous or illegal. If you choose to report them to Human Resources (HR), gain +2 to next Advancement roll. If you choose to discuss what they are doing and offer advice to stop them, gain Leadership 1 or a roll on the professional skills table. If you choose to ignore what they are doing, then gain a level in Streetwise and the team member as an Ally.
22	After long research, development, and very lengthy negotiations, your organization has completed the development of a new interfacing process that will significantly improve your home system's export potential. Gain a level in your choice of Diplomacy, Investigate, or Leadership.
23	You have become part of a social gambling group within your section. Roll Gambler 8+. If you succeed, gain 2 extra benefit rolls and a level in either Gambler or Deception (Lie). If you fail, lose 2 benefit rolls.
24	Your team leader sends you off to several seminars and intense training sessions regarding exciting new developments. Gain Trade (Cybernetics) or Electronics (Sensors).
25	You come to the defense of a colleague being attacked by a group of drunken revelers. Roll Melee (Any) 8+. If you succeed, gain a Contact among those assisting your defense of your colleague. If you fail, make a roll on the Injury Table (Core Setting Book, p.192).
26	Negotiating your way through a series of difficult high-level meetings with a never-ending parade of senior engineers and medical professionals has provided a good grounding in careful persuasive discussion tactics. Gain a level in Persuade.
31-36	Life Event. Roll on the Life Event Table (Core Setting Book, p.192).
41	The new biosynth technology is far more intricate than just connecting biosynthetic linkages with extra bits tacked on; it is a completely new, almost living cybernetic technology. New interfacing requirements and new techniques, new commands and many new options. The training course requires six months of extensive training so you can then teach your workmates. Gain a level in Electronics (Robotics).
42	Your immediate superior has taken long service leave and you have assumed the higher position while they are away. Gain a level in Admin.
43	You have been accused of taking monetary kickbacks by a workmate. The accusation and the circumstances leading to that accusation are investigated thoroughly and you are exonerated. However, the person who accused you refuses to believe the results of the investigation. Gain an Enemy.

INTERFACE: CYBERNETICS IN CLEMENT SECTOR

44	While operating out of a cyberware clinic you are caught up in a terrorist attack. When the gun toting terrorist confronts you and your workmates you attack the threat. You have no idea why. Stupid to be channeling <i>Superpirate!</i> or something but there it is. Roll Gun Combat (Any) or Melee (Any) 8+. If you succeed, gain a level in Gun Combat (Any) or Melee (Any). If you fail, roll on the Injury Table (Core Setting Book, p.192).
45	It has been a very tough, very busy but ultimately very rewarding year. Because of this the board of directors has rewarded you and your work mates (or your staff) for a job well done. Gain one Benefit roll.
46	A secondment to the research or production side of your discipline is both intuitive and educational. Gain a level in Admin or Drive (Any).
51	Your work place has offered some assisted courses. Gain one of Flyer (Grav), Drive (Wheeled), Seafarer (Sail) or Melee (Unarmed Combat)
52	You use your off-work time to study a course at a local university. Gain a level in Art (Any) or Science (Any Social)*.
53	You have been selected by your organization to serve for a short time as a part of a government off world trade and commerce delegation. Gain a level in your choice of Carouse, Diplomat, Language (Any), Persuade, or Science (Any Social)*.
54	You have been requested to head a team or be part of a team investigating serious issues with multiple procedures at a chain of cybernetic clinics. Gain a level in Investigate.
55	The very long stressful hours with little sleep trying to clear a long surgical list or to complete a demanding and complex project have finally taken a toll. You suffer a breakdown which has affected your work and private life for an extended period. Though this will not mean the end of your career, it does have considerable impact. Lose one Benefit.
56	You have been asked to assist with the design of a new version of a popular mindcomp software package. Gain a level in Electronics (Computers).
61	You have been tasked to both establish and run a new branch of the organization you work for or to assist the manager that has that task. Gain a level in either Admin or Persuade.
62	A senior manager is highly impressed by your work performance and outcomes. He/she is determined to groom you for a higher position within the organization. Gain an Ally and a +4 to your next Advancement roll. If you fail this Advancement roll, you have lost the manager's endorsement and will not only lose the Ally but also have a -2 to the following Advancement roll.
63	During your free time away from work, you work hard to improve yourself. Take an extra roll on the Personal Development Table.
64	During a visit to a planet, the chartered transport on which you are traveling to a remote settlement crashes. You are stuck in a wilderness area of the planet and are forced to survive using your wits and some very basic familiarization training. Suffer one roll on the injury table (Core Setting Book, p.192) but also gain one level in a choice of Medic (First Aid), Recon, Survival (Any), or Vacc Suit.
65	You have proven yourself to be extremely talented in your specialty. Gain your choice of an additional level in any skill which you already possess or a promotion to a more senior position.
66	For the second year in a row your work section or branch has exceeded all milestones. Projects have been completed on time and budget, won several design awards, and have sold well. If directly involved with Interfacing assistance in a clinic or hospital, then there have been many successful operations accompanied with glowing recommendations from medical staff. You receive a promotion or gain a graduate school major with suitable accompanying level 1 engineer position (your choice) automatically.

Attitudes to Cyberware in Clement Sector

Attitudes toward most subjects are often different from world to world and cybernetics is no different. In this section, we will explore the attitudes and laws concerning cybernetics in Clement Sector. On some worlds, cybernetics are seen as older technology while on some worlds they are seen as part of a subculture. On other worlds, they are seen as a danger while, on other worlds, they are seen as a necessity.

Immune from this sort of stigma on most worlds are mindcomps and handcomps as these are not seen by most as cyberware. These devices (see more on pages 37 and 23) are ubiquitous throughout most of the worlds of Clement Sector and among the spacers that travel there. Some worlds even have a form of mindcomp placed into a citizen to allow them the ease of performing a certain service. On Reuschle (Hub 0305) in the Hub Federation, all decisions of the government are posed to the citizenry through the use of a cybernetic implant.

Many worlds have a similar attitude toward cybernetics. While many, particularly Bastiat (Franklin 0807), do not provide free cybernetics to the injured and infirm, most worlds in Clement Sector tend to see cybernetics as an older technology which has been supplanted by those with higher social status with things like biological replacements.

Hub Subsector

Hub Federation Member Systems

The Hub Federation often considers cybernetic enhancement of body parts within the populace at large to be the minimum care that should be provided for the citizenry, covered by the basic government medical safety net. If a person within the Hub Federation loses sight in their eye, hearing in their ear, or loses an arm or leg, then the Federation steps forward and provides a cybernetic replacement for that person.

This replacement will often be the least expensive option and not made to be attractive or provide extra functions or improved strength. It will provide the same functionality as the original limb and, perhaps, somewhat less. For this reason, such obvious cybernetic replacements have a bit of a stigma within the Federation and its member worlds.

Kingston

On Kingston (Hub 0106), the religion of Caxtonism not only encourages but requires the use of cybernetics. At the age of five, all children receive their first cybernetic implant in their brains. If the theocracy decides that a person needs to have stronger arms, then the person will have their natural arms removed and replaced with cybernetic enhanced arms of whatever type is required by the function needed by the government.

Totaro

On Totaro (Hub 0104), cybernetics are part of a subculture which appreciates the “chrome look”. This “cyberpunk” subculture has developed a set of aesthetics including open and often excessive cybernetics use as well as music, art, and clothing styles stemming from fiction of the late 20th and early 21st century that, at the time, was considered futuristic.

Cascadia Subsector

Antryl

On Antryl (Cascadia 0704), the obsession with the perfect body which is part of the culture often leads to discrimination against anyone with any sort of obvious cyberware. Here it is seen as a betrayal of the concept of becoming an ideal human.

Cascadia

On Cascadia (Cascadia 0705), cyberware, including mindcomps, are tolerated and it is common to see both citizenry and off-world visitors with very obvious cyberware. Though Cascadian law allows the carrying of small caliber projectile sidearms (with sufficient reason to do so) Integrated weaponry and other options are considered illegal and must either be removed or deactivated.

Dimme

On Dimme (Cascadia 0605), anyone with cyberware, including mindcomps, are considered to no longer be “proper humans”. Those who have such alterations will find discrimination at best and outright hostility at worst.

Franklin Subsector

Era

Residents of Era (Franklin 0304) are not allowed to have any sort of cyberware at all as it breaks the illusion that they are attempting to present. The Chronocouncil has so far refused to include any sort of “cyberpunk” aesthetics to their regions in the same way that they have allowed “steampunk” styles to exist in New Liberty.

Sequoyah Subsector

Harrison

The government of Harrison (Sequoyah 0805) greatly fears the expansionistic attitudes shown by the Caxtonists on Kingston (Hub 0106). While it continues to be the official stance of the Harrison government that there is no discrimination against those with cybernetics, the truth is that those with the devices receive extra scrutiny to the point of even being surveilled by the local government. It is not illegal on Harrison to have cybernetics, but it is often uneasy and uncomfortable for those who do. If the cybernetics are obvious, there is often social discrimination as well.

Dade Subsector

Osiris

Osiris (Dade 0603) prefers for everyone, residents and visitors alike, to have mindcomps or handcomps. This makes it easier for the Social Tier System used by the Osiran culture to function easier.

Superior Subsector

Superior

Cybernetics are illegal on Superior (Superior 0509). The sort of generic purity and human perfection required by law on Superior is only degraded; they feel, by the inclusion of any sort of cyberware.



INTERFACE: CYBERNETICS IN CLEMENT SECTOR

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